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CONTENTS

FEATURES

Birding boom in Doon

4



The Doon Valley in Uttarakhand is a captivating blend of lush greenery, undulating terrain and towering mountains. This varied landscape, coupled with a diverse climate, provides an ideal haven for the exceptionally rich birdlife, comprising both resident and migratory species.

Anil Kumar and **Iqbal Ali Khan** insist that none should miss the birding boom in Doon.

The Forest (Conservation) Act amendments will fail the nation

10



Since 1980, the Forest (Conservation) Act, has been instrumental in stemming the indiscriminate denotification and/or diversion of forest for non-forestry purposes.

Praveen Bhargav shares his views on the implications, if some of the amended provisions of the Act come into force.

PHOTO FEATURE

Riverside Ballet A pictorial tale of the Indian skimmer

20



Parveen Shaikh, who has been working on the Endangered Indian skimmer along the National Chambal Sanctuary since 2016, weaves a pictorial tale of this charismatic bird. The Indian skimmer is a skilled flier and an agile fisher and plays an important role in the ecosystem. Read on.

Others

Book Reviews	14
Diary of a Scientist	16
Nature Watch	25
Conservation Notes	32

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Editorial...

I hope you enjoy reading the *Hornbill* as we try to bring to you a collection of excellent stories contributed by both young enthusiasts, experienced scientists, and conservationists, in every issue. I am sure you will notice a shift in the content we present, and some more when we travel together into 2024.

In this issue after you have immersed yourself in the bird diversity in Doon valley, Uttarakhand, do explore the thought-provoking insights into the amendment of the much-debated Forest (Conservation) Act 1980.

While reading about the lush greenery, undulating terrain, and towering mountains of the Doon valley, you too will yearn to go birding there. I am aware that the stories related to environmental law may not be everyone's cup of tea, but whether we like it or not our lives are governed by laws! A piece on laws related to our forests becomes more thought-provoking especially when penned by a stalwart like Praveen Bhargav. Your feedback on such articles are much appreciated.

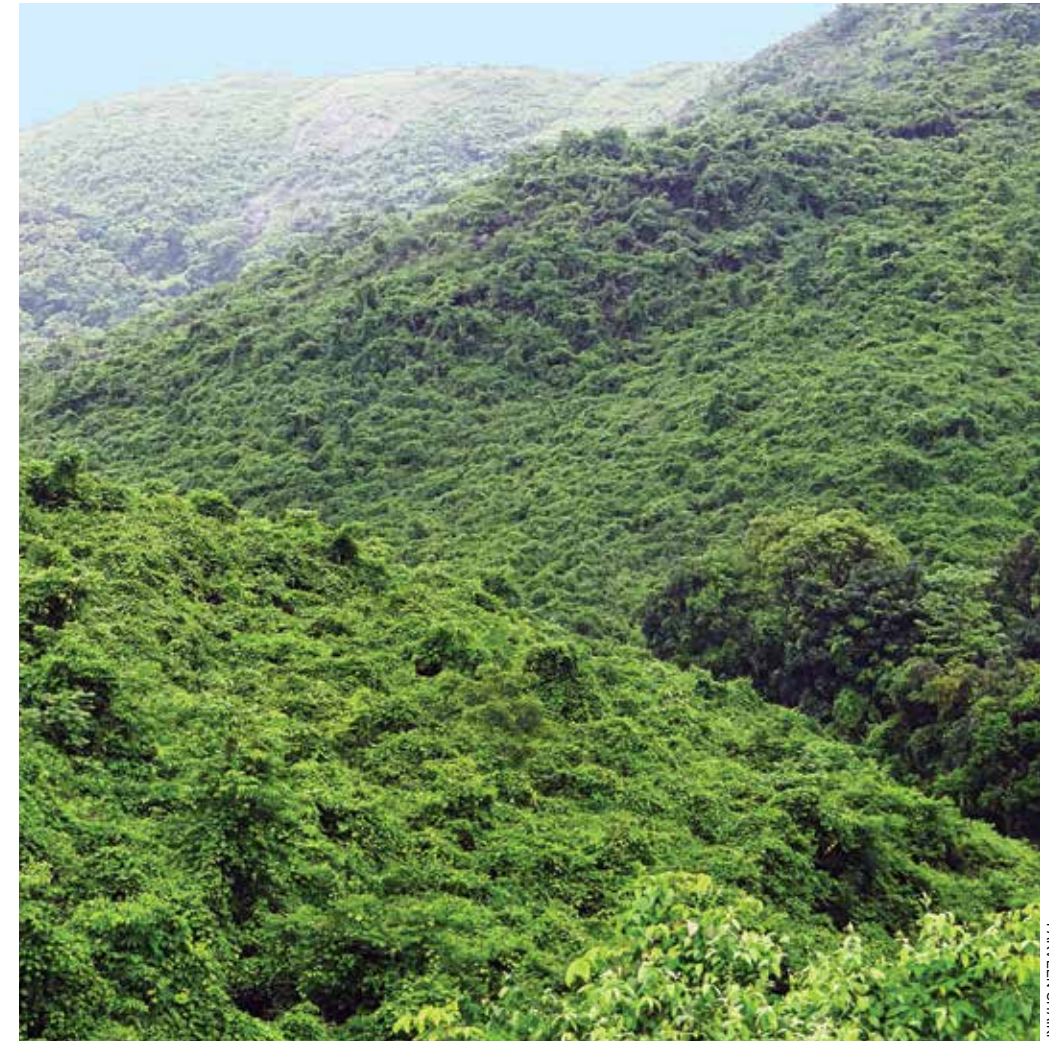
Parveen Shaikh, a dedicated young researcher at BNHS, is passionate about saving birds, particularly the Indian skimmer and black-bellied tern, and the river ecosystem as a whole. She has been working on the Endangered Indian skimmer along the National Chambal Sanctuary since 2016, and has gathered a wealth of knowledge on the bird. Her pictorial tale of this charismatic bird is a visual treat.

Hornbill endeavours to draw your attention to newly released nature-related publications through the Book Reviews section. If you are eager to add these books to your collection after reading the reviews, do let us know.

The new generation scientists at BNHS are making their mark through hard work and dedication. One among them is Dr Neelkanth Bora, who provides a glimpse into his challenging daily routine in the Thar desert of Rajasthan. Starting with this issue, you can look forward to reading a page from the diary of a BNHS scientist.

Manas National Park in Assam is a mesmerizing forest and a home for a diverse range of wildlife from rhinos and elephants to langurs and great pied hornbill, to the rare Bengal florican. Mr Ram Gopalakrishnan, a physician practising in Chennai and Life Member of BNHS, shares his experience in the article 'Mesmerizing Manas'.

Did you know that Buxa Tiger Reserve, renowned for tigers and vultures, where BNHS has started a vulture conservation breeding centre, also has a diverse butterfly population? If not, then turn the pages and read the lepidopterist Divakar Thombre's article on Buxa's butterflies to learn more about the winged beauties in this tiger reserve.



PARVEEN SHAIKH

Karnala

For the past four issues, I have shared my conservation notes focusing on conservation concerns of the highest priority. I hope to see more among you actively contributing to address the challenges facing our wetlands.

As we approach another New Year, I wish you all a year filled with enriching stories and shared conservation efforts.

I look forward to hearing your thoughts and experiences throughout 2024 and your feedback on this issue at director@bnhs.org

Kishor Rithe

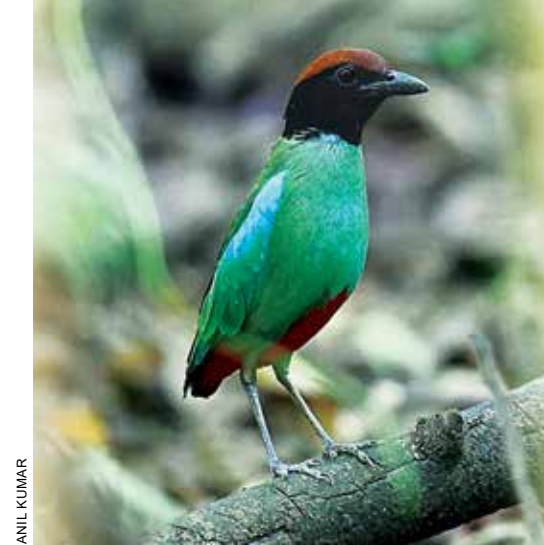


Binog area in Mussoorie Wildlife Sanctuary

Birding boom in Doon

Text: Anil Kumar and Iqbal Ali Khan

Lush green trees, undulating terrain, sky-touching mountains, sparkling streams with melodious breezes, and splendid splashes of colour with the sweet chirping of birds – this is the salient aura of Doon Valley, Uttarakhand. From Paonta town in the west to Haridwar in the east, this beautiful landscape is in the lap of the hills between the Shivaliks in the south and Mussoorie hills of the Lesser Himalaya on the north. The Yamuna and Ganga rivers form a watershed at this location. The Doon Valley is strategically located in western Himalaya on a transition zone between plains and mountains, with Rajaji National Park, reserved forests, and Mussoorie hills in the vicinity.



Hooded pitta, a summer migrant to the Doon Valley



Crimson sunbird, a beautiful nectarivorous bird

The valley and its surrounding region, covering c. 4,950 sq. km, support diverse habitats. Doon Valley's crowning glory is the majestic sal forest, wide open marshes, wetlands, and narrow ravines in the surrounding hills covered in mixed vegetation, with vast stretches of grasslands interspersed with clusters of oak and rhododendron. The varied terrain, vegetation, and climate support an exceptionally rich birdlife, both resident and migratory. Accordingly, several birding hotspots have been identified in the valley. Nearly 597 bird species have been recorded, with approximately 31 of them globally threatened. Over 450 bird species have been identified in and around Dehra Dun city and its outskirts alone. Migratory birds from Siberia and Central Asia, as well as altitude migrants, are a major draw in the valley. Ducks, geese, cranes, francolins, flycatchers, warblers, pipits, nuthatches, thrushes, wagtails, finches, bee-eaters, swallows, and

raptors keep them company. Some of the best birding spots in and around Dehra Dun are:

Forest Research Institute (FRI) campus

FRI is a lush green land in the Doon Valley, with a panoramic view of the Outer Himalaya and one of the oldest forest research institutes on the Subcontinent. As an educational and tourist destination, the campus is well-known for its natural diversity, architecture, and aesthetically pleasing environment, making it an ideal location for birdwatching. The subtropical climate supports diverse plant and animal species, including some endangered ones. FRI is home to more than 365 bird species, notably the Kashmir flycatcher, western hooded pitta, brown wood-owl, sirkeer malkoha, and snowy-browed flycatcher, and has thus been designated as an Important Bird Area by BirdLife International, making it the only educational institute campus in India so designated.



Chestnut-headed tesia, a small, colourful skulker



White-rumped shama, a beautiful songbird



Velvet-fronted nuthatch, seen in forest clearings



Rufous-bellied woodpecker inhabits the forests



Blue-bearded bee-eater frequently visits the FRI and ZSI campuses



Kalij pheasant, often seen off-road in the morning

Wildlife Institute of India (WII) campus

The WII campus, located on the outskirts of Dehra Dun, covers approximately 88 ha. The campus has mostly natural and some naturalized vegetation, with grassland, scrubland, riverine forest, and old sal woodland. The 605 plant species on the campus account for nearly one-third of the total flora of the Doon Valley. This rich floral diversity supports an astounding 350 bird species. Brown fish-owl and Indian pitta were seen in the campus during two of our birding visits. Other interesting bird species spotted were Himalayan grasshopper-warbler, crested treeswift, Oriental scops-owl, and lesser cuckoo. The water body near the guest house hosts some winter migrants every year. During summer, the croaking calls of large-tailed nightjar at dusk blend with the background melody of Indian cuckoo, whose call indicates the ripening of kaphal *Myrica esculenta* fruits, creating an enthralling euphony, joined by the loud resonating call of the large-

tailed nightjar advertising its territory during the breeding season. Surprisingly, the male bird produces a call similar to that of a frog to attract the female for mating.

Zoological Survey of India (ZSI) campus

The ZSI shares its campus with those of the Botanical Survey of India and Anthropological Survey of India. It is also surrounded by the FRI campus on the west and the Indian Institute of Soil and Water Conservation on the south. The ZSI campus comprises anthropogenically altered landscapes with lush green exotic and indigenous trees, a botanical garden, and forest trails, home to numerous colourful avian species. We observed over 175 avian species, including the rufous woodpecker, rufous-bellied niltava, white-rumped shama, and Whistler's warbler, along with red junglefowl that produce loud territorial calls. During winter, flocks of flycatchers, tits, and warblers were a visual treat.

Pondha and adjoining areas

Located on the western outskirts of Dehra Dun, Pondha is characterized by random and unorganised human settlements, agricultural land, gardens, open shrubland, streams of two rivers (Tons and Nun), and well-differentiated patches of sal forest. These diverse landscape elements attract many birds. During severe winters, several local migrants descend from the adjoining middle Himalayan hills. The sighting of Chinese rubythroat was a fascinating new record for the Uttarakhand avifaunal checklist from this area. Other interesting birds in Tons river belt with the same rarity status include the Nepal cupwing and smoky warbler. Other distinctive species are black francolin, stork-billed kingfisher, yellow-wattled lapwing, and green-backed heron.

Thano Reserve Forest area

Thano, located about 15 km east of Dehra Dun, is surrounded by dense forest and seasonal tributaries of Song river along with adjoining agricultural fields, scrub jungle, and riverbeds, not only making it an ideal destination for offbeat travellers and birdwatchers, but also contributing to the high bird diversity. According to citizen science bird data, this area is home to 206 bird species, including eight woodpecker species. We have sighted fire-capped tit, brown-capped pygmy woodpecker, jungle owlet, and white-browed scimitar-babbler in this area. This forest is also home to several elusive mammals, such



Spotted fork-tailed bird, a riverine bird



Whiskered yuhina, seen in forest habitats

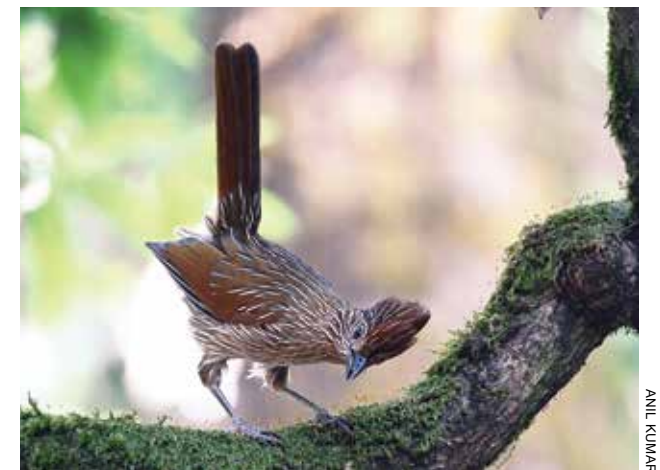
as Asiatic elephant, golden jackal, Indian crested porcupine, and leopard.

Maldevta and adjoining areas

Maldevta is a hilly region on the eastern outskirts of Dehra Dun, about 19 km from the city. It is known for cradling the Song river and its icy cold waters, and is a popular destination



Rufous-bellied niltava, a winter migrant in the valley



Striated laughingthrush, a gregarious montane forest bird



► Nepal cupwing

In February 2019, IAK heard the call of a cupwing species in Tons river, Dehra Dun. By the call, it was identified as a scaly-breasted cupwing but the bird couldn't be sighted properly. After the pandemic, during January 2022 in the same locality, an identical call revealed a Nepal cupwing in lantana thickets. A pale morph with black-and-white scaling was identified later from a photograph. In February 2023, the dark morph was observed in the same area, confirming it as a Nepal cupwing. Though it resembled other cupwings, distinct traits like unspotted wings and a faint black stripe confirmed its identity. Elusive in dense undergrowth, it is a challenge to spot this bird.

◄ Grey-crowned prinia

In October 2019, IAK visited village Karligad, Sahastradhara, but had no luck in finding the prinia he was looking for. A few weeks later, we were excited to spot a grey-crowned prinia in Sahastradhara. We were motivated to search for this bird again in the same area. However, as it is shy, we focused on its distinct call, a soft *te-sirrrrr*. Our efforts bore fruit when we heard the call and sighted three prinias calling synchronously under thick lantana branches, along the upper ridges of Baldi river.



► Chinese rubythroat

Himanshu Chaudhary, a member of our birding group, spotted a Chinese rubythroat in February 2020 on a lantana branch while birding in the FRI New Forest area near Nun river. The bright red throat framed by a black breast band, prominent white supercilium, and a moustachial stripe confirmed the species.

◄ Smoky warbler

Though resident in the Uttarakhand hills, the smoky warbler is a rare winter visitor in the Doon Valley. Our first glimpse of this bird was in November 2019. An unusual new call from a natural rock cavity across the Tons river tempted us to explore and locate the source of the sound. We caught our first glimpse of the bird, which had dark sooty olive upperparts and a pale brown supercilium, and were able to photograph it briefly before it was disturbed by the flight of pond herons.



▼ Long-tailed broadbill

Also known as the helmet bird, this species calls for special attention in our minds. With a bright yellow ring around its neck, and yellow face with a green body and wings, contrasting with the distinctive blue tail, an adult long-tailed broadbill can be described in a single word: colourful. The loud shrill song is a key identification feature also.

during summer. The landscape is a combination of scrub and riverine habitats along the Bindal and Song rivers. The hill scrub forest, riverine beds, and sal patches in the upper reaches make this an ideal birding spot. The linear road leading to Maldevta is lined with tall semal trees that attract many birds when they bloom. According to citizen science bird data, more than 253 bird species are found in Maldevta, of which we were fortunate to sight brown dipper, ashy woodswallow, Indian blue robin, and golden bush robin.

Sahastradhara and adjoining areas

Sahastradhara, which translates as a 'thousand springs', is about 12 km from Dehra Dun. A popular picnic spot on the banks of River Baldi, it is known for its limestone stalactites, hot sulphur springs, and lush Himalayan vegetation. The banks of the river are the best birding spots, along with the montane environs crisscrossed by small streams. During our visit, the Near Threatened



Anil Kumar is a senior scientist at the Zoological Survey of India, Dehra Dun. He works on avifauna, particularly behavioural ecology, sociobiology, and song characteristics of *Copsychus* robins.



Iqbal Ali Khan, a PhD scholar from Gurukul Kangri University, is presently with Zoological Survey of India, Dehra Dun, studying trans-Himalayan birds, particularly the behavioural ecology of Eurasian magpies in Ladakh.

grey-crowned prinia stole the show. This area is also a safe haven for other elusive birds, such as chestnut-headed tesia, mountain bulbul, ashy bulbul, yellow-footed green-pigeon, and stripe-throated yuhina.

Mussoorie hills and adjoining areas

This vast area has an abundant population of both common and rare, migratory and resident, songbirds of the lower Himalaya. One can go birding in either the northern slopes, covered with thick oak and pine forests, or the southern slopes that bear rhododendron and grassy patches. The Mussoorie Wildlife Sanctuary (especially Binog block) and some privately owned estates (namely Jabarkhet Nature Reserve) are particularly worth visiting. We visited Binog twice in one year. On reaching Binog in the morning of May 14, 2022, we immediately began our search for broadbills, popularly known as helmet-bird, because adult long-tailed broadbills have a helmet-like black cap with a glossy blue patch on the crown. We soon sighted an individual of this beautiful species that was busy making a pendulum-shaped nest, which appeared as a bunch of dry twigs and grasses hanging on a tree. We also sighted the black-faced warbler, little pied flycatcher, rufous-bellied woodpecker, maroon oriole, grey nightjar, and banded bay cuckoo.

Landour and Castle hill area

These areas on the eastern part of Mussoorie are characterized by lush green, undulating landscape covered with various kinds of trees. The thick canopy includes tall deodar, banj oak, pine, kachnar, maple, and rhododendron, which support a rich bird diversity. During summer, many species, such as tits, flycatchers, nuthatches, thrushes, warblers, and babblers, along with Kalij pheasant, can be easily spotted.

Make sure you add a visit to Doon Valley on your bucket list for birding to witness the mesmerizing spectacle of its feathered residents and transient visitors. 🐦

The Forest (Conservation) Act amendments will fail the nation

Text: **Praveen Bhargav**

Since 1980, the Forest (Conservation) Act, 1980 [FCA] has been the bulwark in stemming the indiscriminate denotification and/or diversion of forest land by State Governments for non-forestry purposes, including regularization of encroachments, agricultural expansion, and development projects. The FCA was amended in 2023 and rechristened as the Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 [VSA]. However, the 2023 amendments have weakened this important legislation and will most certainly fail to protect the last remaining tracts of natural forests in the country.

In order to understand the implications, it would be necessary to analyze the important amended provisions that are now in force.

Section 1A, which is a new provision inserted in 2023, clarifies that the VSA will be applicable only to land that has been declared or notified as a forest, either under

Indian Forest Act, 1927 or under State Forest Acts. It makes it clear that the VSA will also be applicable to any land that has been listed in Government record as forest, as on or after the October 25, 1980. Government Record will include district wise list of survey numbers identified as “deemed forests” and filed in the Godavarman matter*, Revenue records showing survey numbers as “Forest”, and areas for which a preliminary notification under Section 4 of the Indian or State Forest Act has been issued.

However, the VSA will not apply to such land, which has been changed from forest use to use for non-forest purpose on or before the December 12, 1996 in pursuance of an order, issued by any authority authorized by the State Government. This simply means that those lands which came within the definition of “forests” irrespective of ownership based on the Supreme Court’s Judgement in the Godavarman matter on December 12, 1996,

* The Godavarman matter is a landmark case in the history of forest conservation in India. It started as a writ petition filed by T.N. Godavarman Thirumulpad, a resident of Gudalur in Nilgiris district of Tamil Nadu, in 1995. He challenged the illegal felling of trees in the private forests of Gudalur by the forest mafia and the state authorities. He also sought the protection of the entire forest land in the country from deforestation and encroachment.

One of the most significant outcomes of the Godavarman case was the expansion of the definition of forest under the Forest (Conservation) Act, 1980. The court held that the word ‘forest’ must be understood according to its dictionary meaning and not according to the classification in the revenue records. Therefore, any land that has a natural growth of trees and vegetation, irrespective of its ownership, would be considered as forest and would require prior approval of the central government for any non-forest use. This effectively brought a large area of private and community forests under the ambit of the Forest (Conservation) Act, 1980 and made them subject to the regulatory and protective measures of the Act.



DHIRITMAN MUKHERJEE

The amendment allows for the diversion of forest land for various projects

but had been opened up for non-forestry purposes (e.g., Conversion to coffee or rubber plantations, felling of naturally occurring trees, and conversion to commercial tree plantations or agro-forestry use, resorts etc.) before 1996 will now be outside the purview of the VSA. However, the amended Act will continue to be applicable to such “deemed forests” if they have been identified and not opened up.

Even though the objects of the Act highlight the need to conserve forests, the amended provisions enable more exemptions whereby forest land situated alongside a rail line or a public road maintained by the Government, which provides access to a habitation or to a rail and roadside amenity up to a maximum of 0.10 ha in each case, do not come under the purview of the Act. Furthermore, tree plantations or reafforestation raised on lands which were used/opened up for non-forestry purposes before December 12, 1996, will also be outside the purview of the VSA.

While nobody can object to matters concerning national security, the blanket exemption of notified forest land situated within a distance of 100 km along with international borders or Line of Control (military line between India and Pakistan) or Line of Actual Control (Indo-China border that is not fully demarcated) is a matter of concern. Post the amendments, an unspecified extent of forest land required for construction of strategic linear project of national importance and security (e.g., roads, bridges, pipelines, power lines, etc.) or up to ten hectares for security related infrastructure or construction of defence related project with 100 km of the LOC / LAC will not require any clearance under the amended Act. Also exempt from clearance are forest lands up to five hectares in a Left-Wing Extremism affected area for construction of camps for paramilitary forces or even public utility projects.

Even though the impact by way of fragmentation or breaking up large forested habitats is huge, the mitigation mandated is just planting of trees elsewhere. This is extremely weak and against established scientific knowledge

that planting trees is no antidote to forest loss and fragmentation. It is therefore clear that a large percentage of forests will now lose the protective cover of the VSA, and will thus be susceptible to fragmentation and destruction.

Amendments have also been carried out in the existing Section 2, which is a key provision that imposes restriction on de-reservation or diversion of forest land for non-forestry purposes. It has been clarified that the term “non-forest purpose” does not include any work relating to establishment of zoo and safaris owned by the Government or any authority, in forest areas other than protected areas and eco-tourism facilities included in the Forest Working Plan or Wildlife Management Plan or Tiger Conservation Plan or Working Scheme. Even silvicultural operations (read as official tree cutting or logging), including

regeneration operations, henceforth, are not treated as non-forest purpose.

The amendments go even further which empower the Central Government to specify, under the veneer of conservation and management, any other like purposes that will not be “non-forest purpose”. It is apparent that this provision is extremely ambiguous and fraught with the potential of misuse to the detriment of forest conservation.

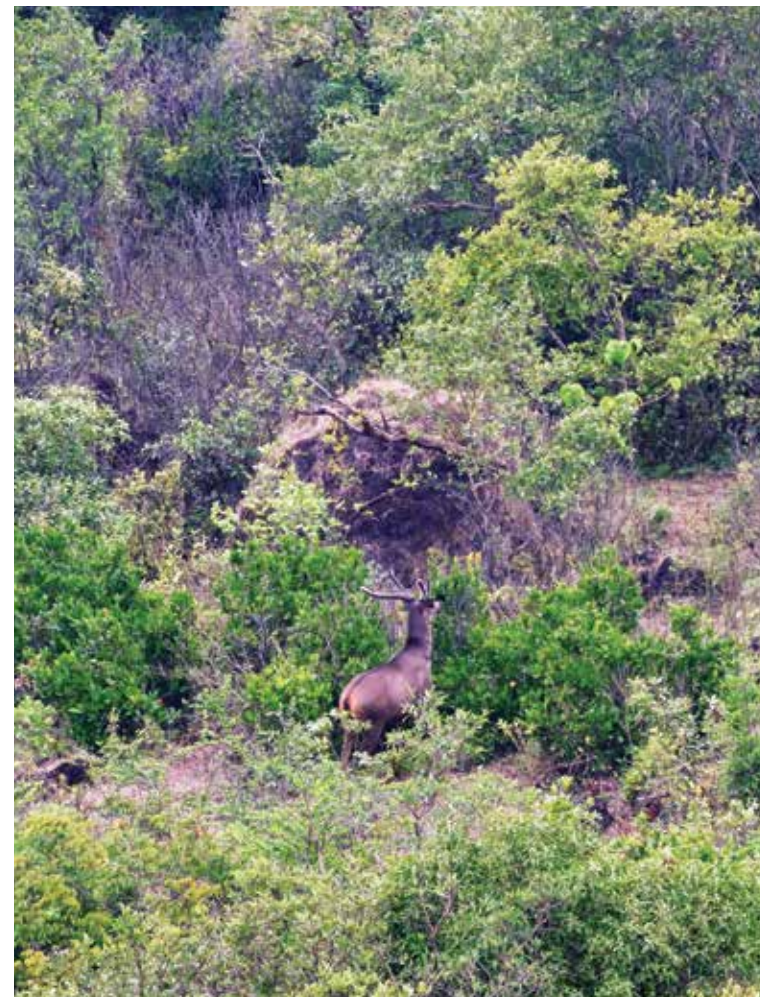
It is also obvious that prospecting for minerals is a prelude to mining in forest areas. Shockingly, a new provision has been inserted in 2023 which empowers the Central Government to specify that reconnaissance, prospecting, investigation, or exploration including seismic survey, shall not be treated as “non-forest purpose”. This is another major shortcoming of the Act and will have serious ramifications for conservation of forests.

As in the past, it remains a short Act with just six sections which will be largely implemented with 100 plus guidelines. This is yet another major loophole by which the Guidelines can be modified at will to facilitate ease of doing business, which goes against the very objects of the law.

The Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 has already been challenged in the Supreme Court and will be tested for compliance of Constitutional provisions, as well as the Precautionary Principle and Inter-generational Equity doctrines. It remains to be seen whether the Supreme Court considers the extensive arguments against the amendments and quashes those provisions found repugnant with the Constitution.

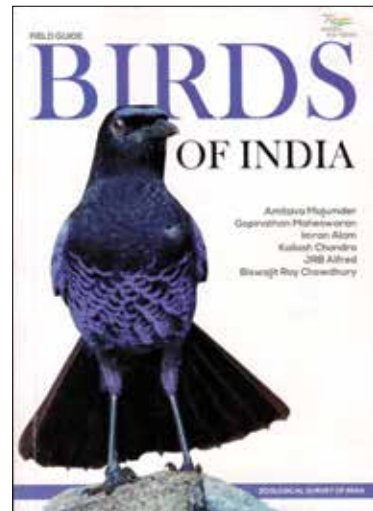


Praveen Bhargav is a Trustee of Wildlife Adhiniyam, 1980 has already been challenged in the Supreme Court and will be tested for compliance of Constitutional provisions, as well as the Precautionary Principle and Inter-generational Equity doctrines. It remains to be seen whether the Supreme Court considers the extensive arguments against the amendments and quashes those provisions found repugnant with the Constitution.



NATASHA GIRKAR

Planting trees cannot mitigate forest loss and fragmentation



Field Guide – Birds of India

by Amitava Majumder, Gopinathan Maheswaran, Imran Alam, Kailash Chandra, J.R.B. Alfred, and Biswajit Roy Chowdhury

Published by: Zoological Survey of India, 2022

Size: 21.5 × 15.3 cm

Pages: 599

Price: ₹ 664/-

Paperback

Reviewed by: **Raju Kasambe**

This beautifully illustrated field guide to the birds of India includes descriptions of 1,331 bird species, belonging to 26 orders and 113 families, and comes at an affordable price. The only comparable book I have seen, so far, is BIRDS OF INDIA - A PICTORIAL FIELD GUIDE by Bikram Grewal *et al.* (2016). This book provides crisp information on the key characters, size, habitat, migration status, distribution maps, and IUCN status (except for vagrants) of each species, along with appendices on the distribution of vagrants, a glossary of ornithological terms, references, and common and scientific names of birds. Notes on the identification of male and female are added, wherever the species are sexually dimorphic.

Among the 1,331 species, 1,227 species have been considered as “regular” as they are known to occur within Indian territory, and the remaining 104 are termed as vagrants, that is, they are recorded occasionally.

The high-quality colour photographs showcasing the actual colours of birds highlights the humongous team work involved in approaching photographers to acquire them. Some very rare species, e.g., Manipur bush-

quail and Himalayan bush-quail, have been illustrated in detail. To identify similar-looking or confusing species, a closer view of the key character has been given separately and not arrow-marked, but in some places, it is difficult to understand which part of the body is highlighted.

With a foreword by Richard Grimmett and a message from Dr Asad R. Rahmani, both renowned ornithologists, the book provides a good overview of the progress of ornithology in India. The first chapter, particularly, describes the history of ornithology in India, presenting cave paintings, followed by ornithology during pre-Vedic and Vedic periods. It gives a nice overview of how ornithology has progressed in India.

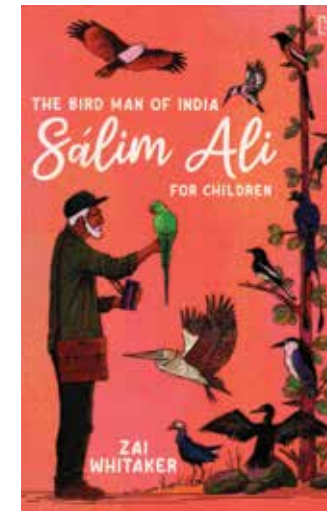
The distribution maps (except for those of vagrant species) are far better than those in many widely used field guides, as a large amount of data is now available due to Citizen Science initiatives, that provide a better understanding of the distribution and movement pattern of birds. However, for birds found only in the Northeast or endemic to the Andaman and Nicobar Islands, zoomed in maps of only the Northeast or the islands, instead of showing the entire country, would have provided a clearer understanding.

New names for taxa now recognized as full species, like Nilgiri sholakili *Sholicola major* (previously called white-bellied shortwing or Nilgiri blue robin *Brachypteryx major*) and white-bellied sholakili *Sholicola albiventris* (previously called white-bellied blue robin *Myiomela albiventris*) are used. But, surprisingly, the old name quaker tit-babbler is still used for the brown-cheeked fulvetta *Alcippe poioicephala*.

Most images for both male and female of sexually dimorphic species have been included, and also for most species with distinct breeding and non-breeding plumages. However, images for some more species showing sexual dimorphism could have been included, such as Oriental magpie robin, lesser florican, Malabar grey hornbill, Indian grey hornbill, and Andaman green pigeon (female shown).

Notably, in some places, the text on images, e.g., Indian grey hornbill (black font over dark background), and in some maps, e.g., white-headed starling and long-billed wren-babbler, is difficult to read. Contrasting colours could have been used for the text and background.

Overall, this book is surely one of the best photo-illustrated field guides for the birds of India published to date. 📖



The Bird Man of India: Sálím Ali for Children

by Zai Whitaker

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Reviewed by: **Asif N. Khan**

Dr Sálím Ali is well known even outside of scientific academia; his autobiography THE FALL OF A SPARROW gives an excellent account of his life. His story has also been covered in an illustrated comic, Amar Chitra Katha's SÁLÍM ALÍ: THE BIRD MAN OF INDIA. The autobiography can be an intense read for children, while the illustrated comic just touches upon his story. THE BIRD MAN OF INDIA: SÁLÍM ALÍ FOR CHILDREN offers the best of both – its writing is light for children, who are the target audience, and at the same time, it is an interesting read for adults as well.

Zai Whitaker's style is both informative and engaging, familiarising young readers with complex scientific concepts without sacrificing the depth or accuracy of the information. The book is a good account of the life of Dr Sálím Ali, and even though it is for children, it does not shy away from the reality of science, such as specimen collection, hunting, and real-life struggles on the field. It

refrains from falsely glamorising ornithology or natural sciences for its audience.

The author also presents the relations Dr Sálím Ali shared with people, and how they shaped his life. One such example is that of Colonel Richard Meinertzhagen, a former British Intelligence officer, who, despite the difference of opinions on the then political situation in India, found common ground with Dr Sálím Ali and worked with him. The support of Dr Sálím Ali's sister Kamoo during a critical phase, when his wife Tehmina passed away, has also been stated. Another mention is of Loke Wan Tho, a business magnate and brilliant bird photographer, who became Dr Sálím Ali's closest friend and companion, and of Dr S. Dillon Ripley of the Smithsonian Institution, with whom Dr Sálím Ali gave Indian ornithology its 'Bible' – the 10-volume HANDBOOK OF THE BIRDS OF INDIA AND PAKISTAN. Most importantly, the role of his wife Tehmina as the unwavering pillar of support in the making of the bird man of India, has been described with much elegance.

However, the book is not merely a story of Dr Sálím Ali and his life. Zai Whitaker emphasizes on environmental conservation by encouraging young readers to appreciate the importance of conserving our natural world, by walking them through the life and work of Dr Sálím Ali. The book instils a sense of responsibility and curiosity about the environment, motivating children to get into the field of natural sciences.

The author also does a good job relating aspects of the 1900s to modern times, that can help young readers to understand the references to that era better. For example, she compared 'telegram stories' and their circulation like *Chinese Whispers* to the current WhatsApp forwards, or by comparing how difficult it was to make a career in natural history back in the day (though it is still not a cakewalk) to finding a job as an astronaut.

THE BIRD MAN OF INDIA: SÁLÍM ALÍ FOR CHILDREN is an inspiring addition to children's literature, conservation, and ornithology. It is a testament to the author's dedication to making complex topics accessible to young minds. Whether read by children, a novice birder, or a seasoned ornithologist, the book offers an amazing read and is highly recommended for all. 📖

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A DAY IN THE THAR

NEELKANTH BORA



Text: Neelkanth Bora

As the sun rose over the Thar Desert of Rajasthan, I was awakened by the gentle mooing of the cattle that grazed nearby. I stepped out onto the terrace of our field research base in the Thar Desert of Rajasthan, where I was greeted by a cool breeze and a pair of toads that leapt out of the water tank. The weather here is usually pleasant at this time of the day, as the temperature drops down significantly through the night. I was joined by my colleague Pankaj, who is in charge of engaging with the local communities. We jokingly call him the CEO, the Community Engagement Officer.

As we sat down to enjoy a warm cup of freshly brewed tea and discuss our plans for the day, Pankaj suddenly motioned me to be quiet. He pointed to a large bird that was walking a few hundred metres from us. It was a great Indian bustard (GIB), or *godawan*, as the locals call it. This magnificent bird is Critically Endangered. It gets its species name *Ardeotis nigriceps* from its black head. We quickly grabbed our equipment and headed towards the bird to study it in greater detail. We positioned ourselves around 150 m away under the shade of a khejri tree, with the ber bushes in front acting as our cover. “*Guru, I think it is a female*”, said Pankaj.

The faint checkered pattern on the neck affirmed that it was a female. The bird was preening itself, but was vigilant to its surroundings. Soon after, it started foraging for food

and found a dung beetle or *gobrilla*, which it quickly picked up with its stout beak and swallowed; it continued to feast, unaware of our presence.

But then, a loud sound startled us and the bird. It was a *pataat*, a barrel-like instrument that the farmers used to scare away birds and other animals. Hunting in Bishnoi-dominated landscape is unusual, given the fierce protection they offer to animals and plants. “*The farmers must be scattering the sparrows feasting upon their bajra*” said Pankaj. The bustard recomposed itself and resumed foraging, but not for long. Another blast of the *pataat* made it take flight, leaving us behind.

We decided to return to our field base to refresh ourselves. There was still no water in the overhead tank, and we had to wait till the sun was high up to run our solar power system. Post breakfast, we left our base to conduct a survey of the study area, a c. 35-hectare fenced-off private land to provide a reserve for GIB. This reserve is a mosaic of fallow, farm, and revenue land, lacking any permanent human settlement in the periphery of 6 km. BNHS has permission to conduct research here with permission of the landowners. The *godawan* intensively uses this landscape to rear its young for four to five months from late October.

We patrolled along the six-and-a-half-foot fence, looking for signs of damage or intrusion. We soon discovered a trench that had been dug under the fence in

a sandy area. Pankaj spotted the culprits – a group of wild boar with litter wallowing near a water body. We noted our observations for the day, and with the mercury rising, retreated to the base.

Our afternoons are often spent visiting the nearest village, Khetolai, to get water, groceries, and other supplies. The village is famous for being the site of peaceful nuclear tests conducted by the Government of India in 1974 and 1998. We also recharge our equipment and batteries during this time, collate data, and rejuvenate ourselves. The wildlife too goes into rest mode, taking shelter in the vegetation to avoid the scorching heat.

By 4:00 p.m., the temperature begins to dip and we head back to our field base. Today, a distress call from Radheshyam Bishnoi, a local conservationist, took us to the spot where a chinkara lay dead from wounds inflicted by feral dogs, a major conservation issue in the area. According to our estimates, these dogs kill around seven to eight chinkaras in a month. We have tried to help by translocating over 200 dogs in the area, with the aid of vets and other experts, but more needs to be done. Radheshyam also told us of a female GIB and her chick, that were chased by a pack of feral dogs. However, since it was time for the sun to set, and to avoid night travel in this pristine habitat, we returned to our base with a heavy heart.

On our way back, we had a stroke of luck. We spotted the rare and elusive desert cat, the apex predator of this arid ecosystem. Its bright eyes were stalking something,



SUNIT S. NARWADE

Great Indian bustard

for sure. We switched off the engine and lay still. After a few minutes, the cat caught a Sindh sand rat and disappeared into the grassland with its precious catch, and we headed towards our base.

We had an early dinner and as we cleaned up the kitchen, we heard a noise in the backyard. It was a desert fox looking for something to eat. As we ended the day, we looked up at the clear sky dotted with stars. We wondered how we could protect all the magnificent creatures we had seen today. To find the answers, we needed to rest our minds and get ready for yet another exciting day ahead. ■

ABOUT THE POSTER

The Indian skimmer *Rynchops albicollis* is a distinctive bird species native to South Asia. Recognized by its striking appearance, it boasts a black crown and nape, contrasting with a white forehead and underparts. The most remarkable feature is its long, slender orange bill with a lower mandible longer than the upper, an adaptation for its unique feeding behaviour. Primarily found near rivers and large water bodies, it relies on skimming the surface of the water to catch fish, making it particularly vulnerable to changes in water flow and habitat degradation.

Classified as Endangered on the IUCN Red List, the Indian skimmer faces severe threats due to river degradation, human disturbance, fishing, and habitat loss. Conservation efforts led by researchers like Parveen Shaikh, Scientist C, BNHS, are crucial for the species' survival. Her initiatives at the National



SRIRAM REDDY

Indian skimmer *Rynchops albicollis*

Chambal Sanctuary since 2016 exemplify ongoing endeavours to address a myriad challenges to secure a sustainable future for the Indian skimmer. ■



Riverside Ballet

A pictorial tale of the Indian skimmer

Text: Parveen Shaikh



The term 'skimmer' aptly describes the distinctive feeding technique employed by a group of birds, characterized by their elongated lower bills used to skim the water surface in search of prey.

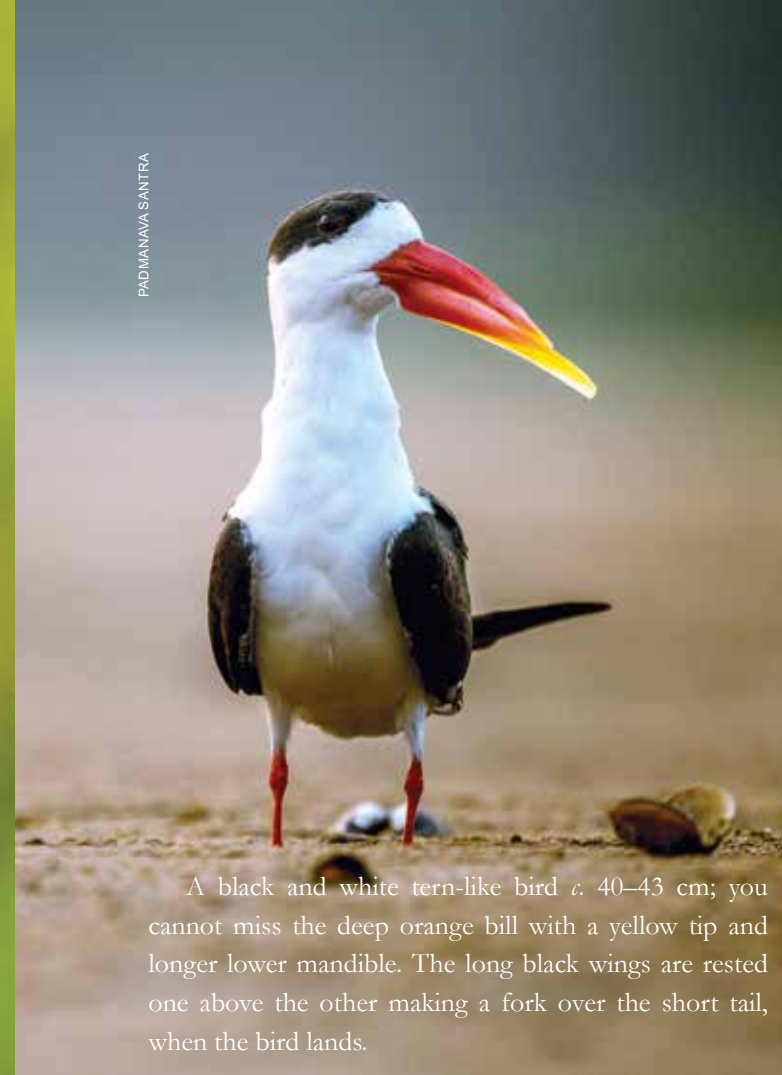
The Indian skimmer, a member of the Rynchops genus, stands apart from its relatives – the black skimmer and African skimmer – in terms of size and plumage colours. Resembling terns, these birds boast a striking appearance featuring a bright orange-yellow bill, white collar, black cap, black wings, and red legs.

Once widely distributed across Southeast Asia, the Indian skimmer's current range is confined to India, Bangladesh, Pakistan, and Myanmar, with rare sightings

in Nepal. India hosts the largest breeding population, particularly along sandy rivers like the Chambal, Ganga, Yamuna, Son, and Mahanadi. Breeding occurs during the summer on sandbars emerging between rivers.

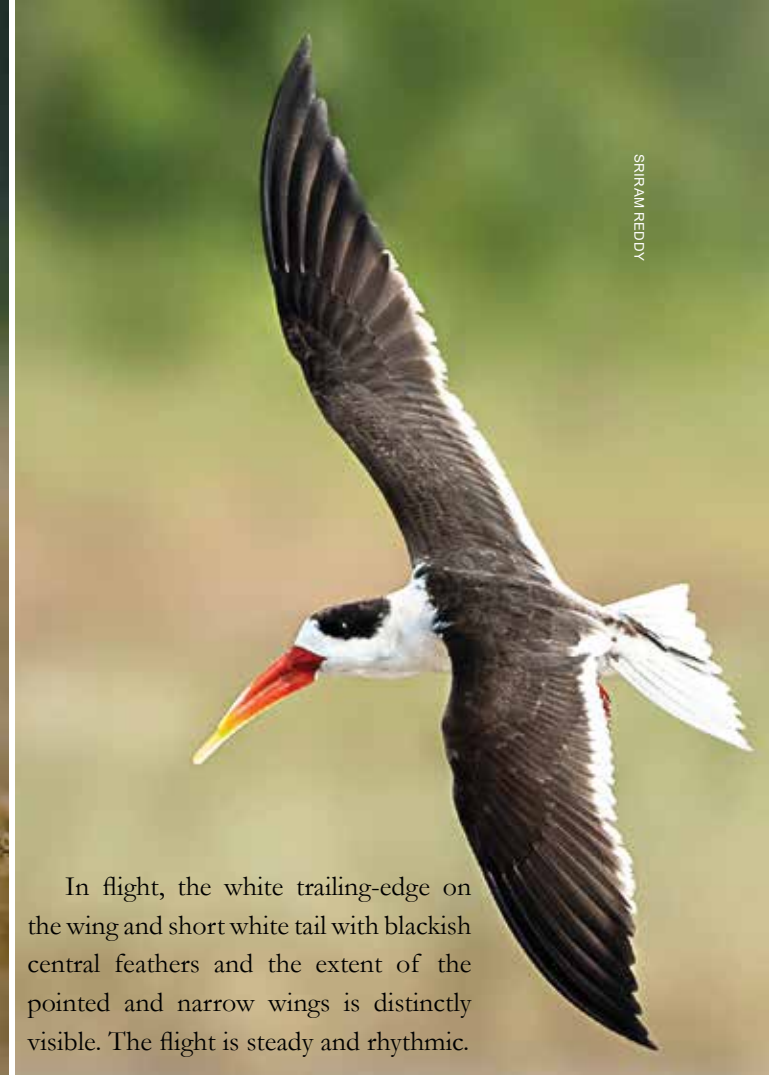
Coastal wetlands, intertidal areas, and estuaries become favoured habitats during the non-breeding season, with notable congregations in places like Jamnagar in Gujarat, Kakinada in Andhra Pradesh, and Nijhum Dweep in Bangladesh. Some populations exclusively inhabit river systems.

PADMANAVA SANTRA



A black and white tern-like bird c. 40–43 cm; you cannot miss the deep orange bill with a yellow tip and longer lower mandible. The long black wings are rested one above the other making a fork over the short tail, when the bird lands.

SRIRAM REDDY

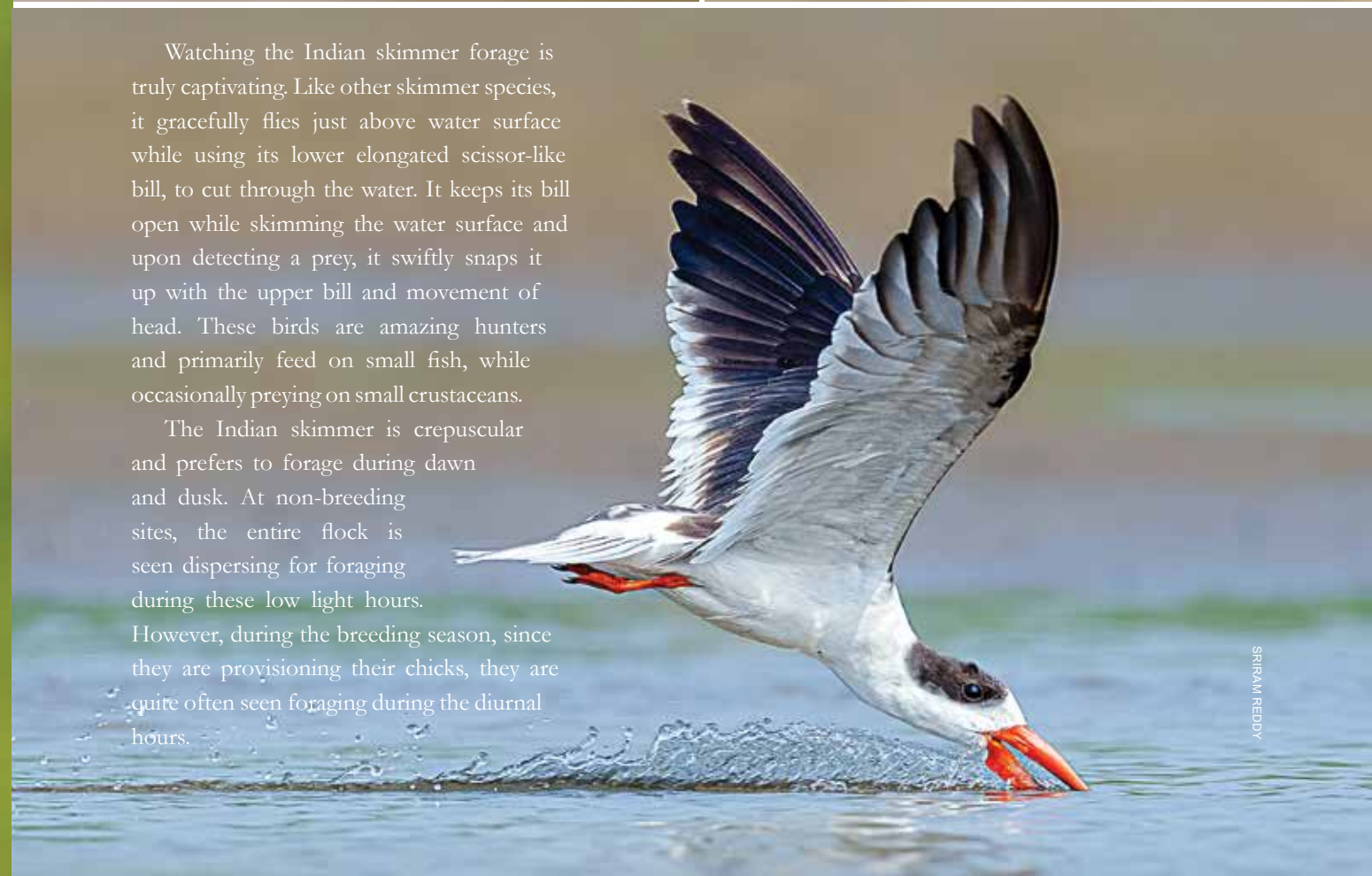


In flight, the white trailing-edge on the wing and short white tail with blackish central feathers and the extent of the pointed and narrow wings is distinctly visible. The flight is steady and rhythmic.

Watching the Indian skimmer forage is truly captivating. Like other skimmer species, it gracefully flies just above water surface while using its lower elongated scissor-like bill, to cut through the water. It keeps its bill open while skimming the water surface and upon detecting a prey, it swiftly snaps it up with the upper bill and movement of head. These birds are amazing hunters and primarily feed on small fish, while occasionally preying on small crustaceans.

The Indian skimmer is crepuscular and prefers to forage during dawn and dusk. At non-breeding sites, the entire flock is seen dispersing for foraging during these low light hours. However, during the breeding season, since they are provisioning their chicks, they are quite often seen foraging during the diurnal hours.

SRIRAM REDDY



The Indian skimmer is a colonial species and is always seen in groups. The flock size varies from as small as 10–20 birds to as large as a gathering of 800–900 birds in the delta region of Bangladesh.

When they fly in groups, they are seen performing acrobatics, and occasionally, synchronizing acts flashing the dark black wings. They migrate between their non-breeding and breeding sites every year. They prefer coastal sites for the non-breeding season, but return to nest in colonies on sandbars in between rivers during March–June.



PADMANAVA SANTRA

At the breeding grounds, the male can be seen wooing the female by bobbing its head. Once the female has accepted the proposal, he brings a fish and offers it to her before mating. A ground-nesting bird, the Indian skimmer makes the nest by scraping sand and lays its eggs directly on the sandy surface. Both parents play active roles in nest site selection and construction.

Three to five eggs are laid, and both parents share the responsibility of incubation. Coping with harsh nesting temperatures, the parents cool the eggs with their wet bellies. After hatching, the chicks are well camouflaged with the sand and take approximately three weeks or more to fledge, showcasing the species' remarkable adaptability and resilience.



PADMANAVA SANTRA

The fledglings look very different from the parents. The lower bill begins to grow longer than the upper bill. The wings are still developing and the plumage appears dull and blotchy. The bill is dull, with very little orange and a black tip. A subadult in a group can be easily identified by the black tip on the bill. Once the breeding season is over, the birds fly to their non-breeding sites, with the fledglings. These birds exhibit site fidelity to their breeding and non-breeding sites.

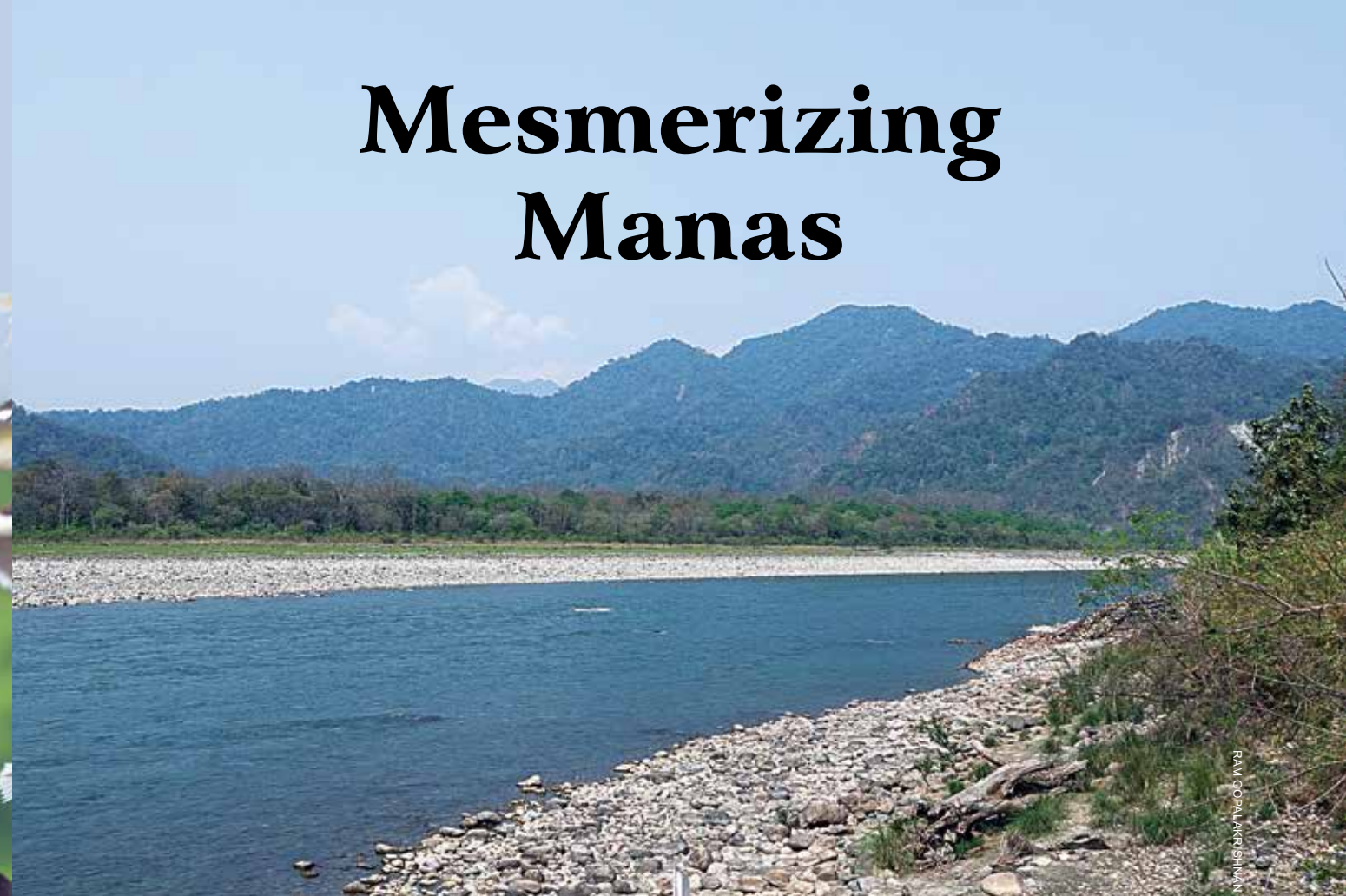


ARPI BANSAI

Mesmerizing Manas




MUNNA MANDHALAPU



RAM GOPALAKRISHNAN

The Manas river at Mothanguri

Text: **Ram Gopalakrishnan**

The decline in Indian skimmer population is attributable to widespread degradation of rivers and wetlands through irrigation schemes, increase in human disturbance, fishing, transportation, domestic use, and pollution from agricultural and industrial chemicals. Barrages on rivers disrupt water flow – low water levels expose nests to predation and trampling, while sudden release of water cause nest site flooding. Coastal areas are threatened by reclamation, altering essential habitats. Urgent conservation measures are imperative to mitigate these threats and preserve the Indian skimmer's dwindling population. 



Parveen Shaikh currently works as Scientist C at the BNHS. She began her research on the Endangered Indian skimmer at the National Chambal Sanctuary in 2016. Her work focuses on addressing the persistent conservation challenges faced by this species.

Can a wonderland go to the brink of annihilation, and then resurrect itself magically against all odds? Assam's Manas National Park and Tiger Reserve, on the India-Bhutan border, had experienced poaching and encroachments for a couple of decades as collateral damage from the Bodo agitation for a separate homeland. As the shrinking habitat vanished, highly endangered species that could not survive outside this habitat, such as Bengal florican, black-breasted parrotbill, Jerdon's babbler, slender-billed babbler, swamp francolin, and Finn's weaver – birds any birder would give away his right hand to see – were also vanishing!

When I last visited the national park in 2006, it was just stumbling its way out of years of destruction. Fifteen years later, when I returned for a birding trip, I had only one question in mind – would the park have resumed its status as one of

the last strongholds of the terai grassland habitat, which has been largely wiped out by agriculture in almost the entire northeast?

In search of the Bengal florican

When we visited Manas National Park, we were first on the lookout for the Bengal florican, which is best seen in the eastern grassland part of the Park. We set aside an entire day to look for the florican and other grassland specialists. Low grasses on either side as far as the eye could see and the mountains of Bhutan in front, with the background piercing call of the black francolin made for a sylvan setting for morning birding in the eastern Bhuyanpara range. Against this background, the magnificent black, white, and copper coloured male florican, with its black head sticking out like a periscope above the grass, was easily spotted from a distance. Although it appeared to be shy because of the presence of our



A pair of male Bengal florican



Pale-chinned flycatcher

vehicles, we still spotted half a dozen floricans. After such a wonderful sighting, breakfast tasted especially flavourful!

Grassland birding: sometimes tough, sometimes easy

In the tall elephant grass into which we headed later, striated babblers and Siberian stonechats were much easier to see than the rare ones we were after. Nonetheless, a succession of lifers ensued: the handsome slender-billed babbler with its variety of browns, followed by the chestnut-capped babbler with its striking snowy white head. The golden-headed cisticola yielded us only a fleeting glimpse.

We headed north into the forest, where a steady stream of forest dwellers interrupted our gypsy drives. A black-tailed crane that posed for the perfect shot in a forest pool was a memorable sighting. Because our guide Rustom Basumatary had an uncanny ability to hear bird calls beyond the engine's noise, our list of species swelled. All our sightings were based on visual and acoustic cues directly seen/heard; bird call playbacks were not deployed as our group leader Nikhil Bhopale was strictly against using them.

An amazing afternoon ensued after we headed to the former seed farm at Kokilabari, just outside the park. Seven more male floricans were sighted, but not even one of the well-camouflaged females. Hen and pied harriers,



Black-tailed crane



Grey-headed woodpecker

males with their stunning black and white patterns, systematically quartered their prey a few metres above the ground. A short-eared eagle owl was the sundowner for the day.

Floricans flushing out

Next morning, we headed straight north into the Bansbari range, initially through open grasslands. The piercing call of the black francolin alternated with peacock calls. Our vehicle startled a male florican by the roadside and soon enough, three floricans were flying around us! Their white wings were a giveaway even from a long distance and we feasted our eyes on them, content in knowing that the single largest population worldwide of this highly endangered bird is securely protected here.

Lunchtime was spent at the iconic Upper Bungalow at Mathanguri, watching the Manas river tumble out of Bhutan into India. This forest bungalow bids fair to be ranked as one of the most scenic places in India. We spent the afternoon enjoying the view at Mathanguri and idly photographing a common merganser fishing on the nearby riverbank. As we headed back, a group of kalij pheasants spent several minutes boldly foraging on the road in front of us, unaffected by our vehicles and cameras.

We started our birding the next morning in the thick broad-leaved forest adjacent to the Manas river. Broadbills are always a magical experience for any birder: it's a toss-up whether the silver-breasted or the long-tailed broadbill is prettiest, until you run into the red-headed trogon or the sultan tit in the next tree! A pair of great hornbills immediately took off on detecting our presence in the dense forest, and puff-throated babblers were easily seen in the forest undergrowth, but the cryptic Abbott's babbler, although heard easily, was seen just once.

After lunch, we cast a last throw of the dice in the Bhuyanpara grasslands, and to our delight, we were rewarded by the sightings of the Indian grassbird (formerly rufous-rumped) and Chinese rubythroat (formerly white-tailed), with its red throat shining like a beacon in a sea of brown



Greater one-horned Indian rhinoceros

grass. And of course, more floricans, which promptly took off on seeing us.

Most people visit Manas for the big mammals, as the population of the big three (elephant, buffalo, and rhino) is abundant. Tiger pugmarks reminded us that this was a tiger reserve. The rhino population of 30 re-introduced individuals (from Kaziranga and Pobitora) has swelled to 46, and a healthy population of swamp deer (also re-introduced) serves as the staple herbivore. A far cry from the situation a couple of decades ago, when poaching was rampant and large mammals almost wiped out: Manas has miraculously recovered to where it was in the 1980s.

Next time, if someone tells you grasslands are boring and lifeless, you know where to take them. With its charismatic large mammals, flocks of Bengal floricans and other extraordinary birding opportunities, Manas makes for a complete package, one to rival Kaziranga and perhaps surpass it one day! 🦋



Ram Gopalakrishnan is a physician practising in Chennai. He enjoys birding in remote locations and hopes to stimulate love for nature and its conservation through his writings.

Bounty of Butterflies in Buxa Tiger Reserve

Text and Photographs: **Divakar Thombre**

India, a country with rich floral and faunal diversity, has offered me many opportunities to visit different places and explore their biodiversity. Recently, I was fortunate to be part of a butterfly expedition at a splendid location Jayanti village – Buxa Tiger Reserve in West Bengal. The Reserve (760 sq. km; C. 866 m. above sea level), located on the banks of River Jayanti, is surrounded by Bhutan to the north, Bangladesh on its southern boundary, Assam to the east, and Sikkim in the west. It is inhabited by elephants, tigers, leopards, and many other wild animals, birds, and insects. As this region receives rainfall only between May to August, there is shortage of water, especially during the hot summer season, leading to the movement of animals and also butterflies to the external peripheries of the jungle in search of water.

On the first day of our expedition, we crossed the dry basin of River Jayanti to reach the Mahakay Shiv Mandir, which was approximately 2 km from village Jayanti. The rocky terrain of Buxa hill and the dry white riverbed made for a beautiful landscape that was perfect for a wide-angle shot.

Walking across the river basin, we began our search for butterflies, hiking from one hill to another, scanning the humongous rock cliffs surrounding our path. The scorching heat of the sun was hitting us hard, but at the same time

Jayanti river nourishes the rich biodiversity
of Buxa Tiger Reserve



Paris Peacock

the cool river water soothed our tired feet. We carefully trod over the slippery stones in the marshy river basin, trying to maintain our balance despite the heavy and valuable cameras dangling on us. Thanks to our guide, we soon mastered the art of stepping on the right spots and in the right manner to cross the river. Soon, we reached *do bandh* – the union of two streams. It was at this point that our search finally bore fruit – we saw hundreds of butterflies mud-puddling, a process of acquiring nutrients from mud. We were fortunate to witness several butterfly species, some of which were Glassy Bluebottle, Mime, Sylhet Yellow Rajah, Tailed Jay, Common Peacock, Paris Peacock, Yellow Gorgon, Great Nawab, and Five-bar Swordtail. Like a beautiful bedsheet, these crowds of multicoloured butterflies covered the riverbed. All the aches and pains of our journey were easily forgotten at this breath-taking sight. Soon, using our armoury of cameras, we started photographing these wonderful creations of Mother Nature.

High-quality pictures of butterflies can be captured through ground level shots, when one lies completely flat on the ground, as this posture helps in capturing all the minute details of these insects. And so, without any hesitation, we immediately lay down on the marshy ground with our cameras, to record these beautiful creatures.

Each one of us captured as many species as possible from every possible angle. On close observation, we realized that all the mud-puddling butterflies were males. The minerals



Tawny Mime



Veined Jay



Great Nawab



Purple Sapphire



Glassy Bluebottle



Mud-puddling Pierid butterflies on the bank of Jayanti river



Driving through Buxa, we encountered a rich bounty of butterflies

absorbed from the soil are primarily required for reproduction. A male butterfly then passes on these minerals to a female. Male butterflies having the highest amount of minerals are the most sought after by their female counterparts. This explained the fierce competition among the males to obtain minerals. Some males even fought and sat on one another, to absorb the right proportion of salts from the soil. On several occasions, we observed that the males of some species such as Common Leopard and Glassy Bluebottle, which are known to be aggressive, flew around disturbing the entire group and ensured that all the other butterflies flew away from their positions.

Engrossed in taking pictures, we completely lost track of the time, then realized that we had spent more than four hours at the spot! Yet, our hunger for watching and clicking photos of these magnificent creatures was not satiated.

Our location was very close to the Bhutan border, which is demarcated by River Jayanti. Thus, we were all hoping we would see one of the most splendid butterflies of this region – the Bhutan Glory. We were quite optimistic, but unfortunately, we did not even get a glimpse of this butterfly during our four-day stay.

Nonetheless, we explored every nook and corner of the Jayanti river basin, where we found more than a hundred butterfly species, of which a few were extremely rare while some were common.

On the last day of our expedition, we visited new site, but much to our dismay, we did not find the expected number and species of butterflies at this site. Nevertheless, the sight of 30–40 greater hornbills flying directly above us – a completely unforgettable sight – made our day!

At the end of our expedition, all of us were overwhelmed on successfully witnessing the natural beauties of Buxa Tiger Reserve, a very peaceful, silent, and beautiful place worth exploring for one and all. 🦋



Divakar Thombre is a well-known lepidopterist and bird enthusiast, who has participated in several expeditions. Author of three books and several articles, he has won several accolades in photography.



Wetlands under siege

Text: **Kishor Rithe**

Wetlands are ecosystems of great economic, cultural, scientific, and recreational value, with diverse and abundant flora and fauna. They have a significant impact on the livelihoods, health, and security of local communities and provide ecosystem services like food, water for domestic and irrigation use, medicines, construction material, nutrient recycling, water purification, shoreline stability, climate regulation, ground water recharge, flood control. They also provide cultural services, including spiritual, aesthetic, educational, and scientific benefits. Yet, we are losing wetlands three times faster than forests. World Wetlands Day, celebrated each year on February 02, is a means to raise national and global awareness about wetlands, in order to reverse the rapid loss of these critically important ecosystems, and to encourage actions to conserve and restore them.

Migratory waterbirds connect continents and countries, and serve as excellent indicators of the environment at both global and local scales. Of the 1,200 bird species found in India, around 22% are totally dependent on wetlands. Some wetlands are known for their bird species abundance and diversity.

Several ornithologically important wetlands are threatened by the increase in human population, socio-economic activities, and human-induced adverse natural phenomena, putting waterbirds at risk. It is, therefore, important to manage wetland habitats to ensure the conservation of waterbirds.

Over the years, BNHS has played an important role in documenting the status of these wetlands and suggesting management practices for the conservation of bird habitats. BNHS also works with the MoEF&CC, Govt of India,

on the Central Asian Flyway (CAF) programme. During migration, birds use certain specific routes to reach their wintering or breeding grounds, which are called flyways. CAF supports 182 migratory waterbird species. The major traditional wintering grounds for waterbirds of the CAF are situated in India. During peak migration periods, hundreds of thousands of birds descend upon the wetlands of India, seeking refuge and food. Wetlands are dynamic, interconnected habitats influenced by natural processes and social practices. Hence, protecting these migratory birds and implementing science-based habitat management is crucial, at the same time ensuring sustainable benefits for local communities.

Though these efforts are commendable, BNHS and its members, and local partner organisations are concerned about the present situation in some states of India. Let us do a reality check on a few important wetlands in these states.

Uttar Pradesh

Haiderpur wetland: This is one of the largest man-made wetlands in UP, formed after the construction of the Madhya Ganga Barrage in 1984. The region is fed by the Ganga and its tributary Solani, constituting an area of 6,908 ha within the Hastinapur Wildlife Sanctuary in Muzaffarnagar and Bijnor districts. The wetland is an important stopover site for migratory birds on the Central Asian Flyway; it was recently declared as a Ramsar site.

Haiderpur wetland supports over 25,000 birds of 300 species annually. Of these, more than 90 species are migratory and visit the wetland between December and February. It also serves as a breeding site for the Near Threatened Indian grassbird *Graminicola bengalensis*. This wetland is home to a diverse range of over 30 plant species, more than 40 fish species, and 10 mammal species. There are records of sighting large flocks of greylag goose *Anser anser* and bar-headed goose *Anser indicus* in this wetland. The Asian Waterbird Census (AWC) conducted from 2020 to 2022 showed an increasing trend in waterbird numbers (over 20,000 to 37,000) visiting this wetland. However, presently the wetland faces several threats. Ipomea and water hyacinth infestation is spreading very fast here. Illegal fishing is rampant and impacts large flocks of bird and their congregation.

Sheikha jheel: near Aligarh, another important waterbird habitat, is currently overrun by invasive plants. Urgent action by local authorities is needed to remove the water hyacinth, ensuring suitable areas for waterfowl to settle.

Rajasthan

Dhawa Doli: This Oran (sacred grove), a wildlife sanctuary, is 45 km southwest of Jodhpur city in Barmer district. Renowned for its blackbuck, chinkara, and nilgai populations, and diverse reptiles, this sacred grove is gifted with both a river and a wetland nearby.

Near the village of Dhawa, a beautiful lake, now free from *Prosopis juliflora* infestation, faces a grim reality. According to the locals, free-ranging dogs kill the thirsty chinkara or blackbuck visiting the lake, resulting in the loss of one or two animals each week, along with waterbirds. The blackbuck population has dwindled from 2,000 to just a few hundreds.

Downstream at Jojari river, a tributary of the Luni, pollution from Jodhpur city disrupts life in villages like Melba and Doli. A two-kilometre stretch of road, passing through agricultural fields, is filled with foul-smelling sewage water. Waterbirds like common coots scour the polluted slurry for food. Despite protests, the grievances of farmers from 22 villages remain unheard by the Jodhpur Development Authority (JDA); the villagers have now almost given up the battle.

Jodhpur, known as the ‘Sun City’, is the second largest city of Rajasthan State, with a population of over 13 lakhs, inhabiting an area of 232 sq. km. The daily generation of 380 tonnes of solid waste, and lack of waste segregation at the source, has resulted in increasing challenges in municipal waste management for the city. Although 80% of the city has a sewerage system, pollution from Jodhpur adversely affects the Jojari river, harming both migratory and resident waterbirds, as well as local wildlife like blackbuck and chinkara. How polluted water from Jodhpur reaches Jojari is still a mystery. Despite being discussed in the High Court of Rajasthan and National Green Tribunal, the issue persists, turning the once wonderful Doli Oran into a crisis along the Jojari river. The environmental degradation here has impacted tourism, livelihoods, and the local Bishnoi community.

Bihar

In Bihar, annual floods create expansive shallow wetlands, once a haven for hundreds of thousands of waterbirds. This was documented by Dr Sálím Ali and P.V. George in the *Journal of the BNHS*. During our surveys in the state, we noticed extensive trapping and hunting of birds and open sale of birds even on national highways – a long-standing issue in this part of the country. While the forest department is trying to penalize poachers under the Wild Life (Protection) Act and raising

awareness among the locals, we can still see lines and lines of nets over the wetlands! The recently released *Bihar AWC Report 2023* increases our concerns. In 2022, BNHS surveyed 68 wetlands and counted 45,173 birds (including 39,937 waterbirds, averaging 587 per wetland). In 2023, a total of 76 wetlands (1,882 sq. km) recorded 69,935 birds (including 61,957 waterbirds, averaging 815 per wetland). Though this is a positive sign, there is need to conduct a massive awareness campaign, with law enforcement from the forest department.

BNHS plans to conduct a cross-sectoral stakeholders' workshop, engaging local organizations, to discuss wetland and bird conservation in Bihar. Also, we need to explore alternative livelihoods for bird poachers. We will soon address the threats to wetland birds in Bihar.

Kabar Taal: Bihar's sole Ramsar site, also faces critical challenges due to unrestricted trapping of fishes and birds, and extensive encroachment. The Ramsar status, unfortunately, does not afford it extra protection or a conservation mechanism.

Maharashtra

BNHS is working at six inland wetlands in Maharashtra, in addition to coastal wetlands around Mumbai. Though it is now well-known as a city of flamingos, Mumbai is losing some of its precious wetlands, as per the National Wetland Atlas of 2006–07 and the subsequent Decadal Change Atlas. The Western Regional Bench of the NGT identifies Panje in Navi Mumbai as an intertidal wetland, but it is now in the custody of a private company.

Small wetlands in urban areas play a crucial role as biodiversity reservoirs for aquatic fauna and birds. Several wetlands like Belpada, Bhendkhal, Bokadvira, and Savarkhar listed in the 2010 wetland list, are yet to be officially notified. The Mangrove Cell, Government of Maharashtra, is keen to conserve Belpada, Bhendkhal, Panje, NRI-TS Chanakya, and Bhandup wetlands. Belpada and Bhendkhal wetlands have been reclaimed, but Bokadvira can still be restored.

The State Wetland Authority of Maharashtra needs to examine all the wetlands, as per the latest National



Small wetlands in urban areas are important stopover sites for migratory birds



Some wetlands are known for the abundance and diversity of their birds

Wetland Decadal Change Atlas (2017) and notify each listed wetland for protection. The Navi Mumbai Municipal Corporation (NMMC) has committed to maintain the NRI-TS Chanakya wetland and the DPS Lake in association with BNHS.

Ladakh

The high-altitude wetlands (HAWs) of Ladakh are mainly concentrated in the Changthang region and consist of diverse freshwater and saltwater bodies. Situated primarily in the eastern part of Ladakh near the Tibet border, the Changthang landscape is a critical refuge for migratory bird species during their journeys. In the autumn season, from August to November, waterbirds migrate towards their wintering sites in South Asia and other regions, with wetlands such as Tso Kar, Hanle, and Chumur playing a pivotal role as key stopover sites. These high-altitude lakes and wetlands, along with their surrounding catchment areas, play a vital role in preserving a diverse range of globally important wildlife species, and are sanctuaries for approximately 34 waterbird species, including both resident and migratory birds, and large mammals.

Being a cold desert region, local communities rely heavily on these lakes and wetlands for natural resources, engaging in activities such as water extraction, irrigation, livestock grazing, and sand mining. However, increasing population, changes in traditional lifestyles, and growing tourism exert pressure on these fragile ecosystems and various natural systems in the area.

Jammu and Kashmir

BNHS has been surveying wetlands in Jammu and Kashmir for long and has initiated several management and conservation interventions. Four major wetlands of Kashmir (Hokarsar, Shallabugh, Mirgund, and Haigam) and one in Jammu (Gharana) surveyed by BNHS are in good condition, with a substantial waterfowl population, probably due to the effective measures taken by the J&K Department of Wildlife Protection.

Tamil Nadu

Of the 75 Ramsar sites in India, 14 are from Tamil Nadu. The establishment of a State Bird Authority reflects the state's commitment to bird conservation, the credit for this could go to BNHS which has been working



DHIRTIMAN MUKHERJEE

Several ornithologically important wetlands are threatened by anthropogenic activities, putting waterbirds at risk

here since the 1960s, and has set up a Bird Migration Study Centre in 2009.

Supreme Court on Dying Lakes and Empty Jheels

Dr Asad R. Rahmani, former Director of BNHS calls wetlands without birds as “empty jheels”. Loktak and Keibul Lamjao lakes in Jammu and Kashmir are threatened by a road and embankment project. Telangana’s Osman Sagar and Manjeera are drying up. There is similar outcry for wetlands in other states. The NGT has directed states to classify lakes as wetlands for improved management. The states had initiated the process of identifying wetlands, but the process is still incomplete. The Supreme Court of India has directed the National Wetlands Committee to compile data on the status of compliance of environmental norms for significant wetlands to ensure remedial action.

Amrit Dharohar: A boon

In addition to the ongoing wetland conservation schemes of the Government of India and various states, Finance Minister Nirmala Sitharaman, recently announced the Amrit Dharohar scheme. The new scheme aligns with the Prime Minister’s ‘LiFE’ vision and aims to promote conservation values of Ramsar Sites. With an

increased budget allocation of Rs 3,079.40 crore (24% more than 2022–2023) to the Ministry of Environment, Forest and Climate Change, the government, through its Amrit Dharohar scheme, plans to improve the state of wetlands, over the next three years.

So, the Prime Minister of India is committed to saving our wetlands, the Supreme Court has given clear directives, the MoEF&CC has stated that it is a national priority, and the scheme Amrit Dharohar has the requisite finance. Everything is in place. What is required now is that BNHS members and IBCN partners along with the State Governments identify and address the issues troubling our wetlands like poaching, invasive species, pollution, encroachments, reclamation, and recreational use to secure the habitats and enhance the population of waterbirds. 🐦



Kishor Rithe, Director, BNHS, has been working for wildlife conservation through sustainable livelihoods, conservation action, advocacy, and policy for over three decades.

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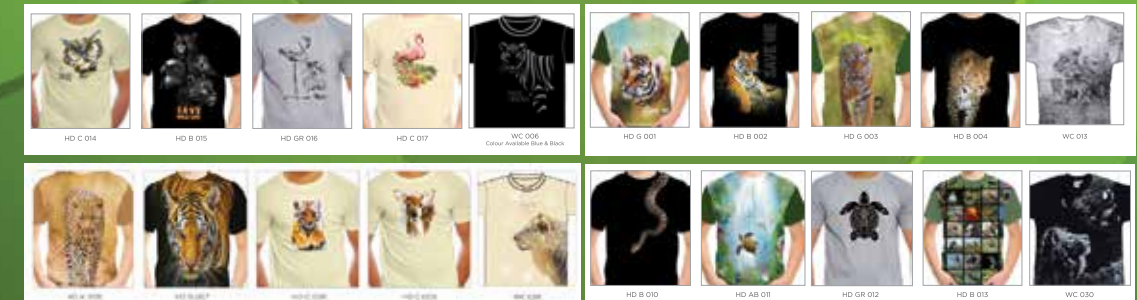


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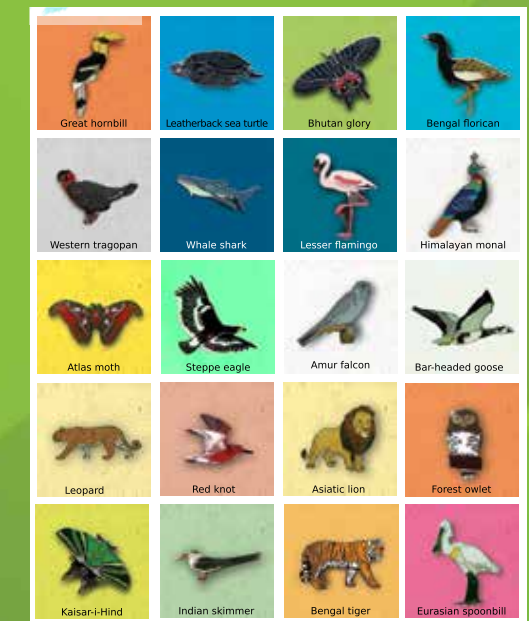
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